

ASSISTING APPARATUS

Technical Field

[0001] The present invention relates to an assisting apparatus for assisting a care receiver in standing up and sitting down.

BACKGROUND ART

[0002] The need for assisting apparatuses is increasing as the aging society develops. Assisting apparatuses assist in transferring, moving, and with bowel movements, etc. of care receivers and, as one part of the assistance provided, are endowed with a function for assisting care receivers in standing up and sitting down. Through the introduction of assisting apparatuses, physical burden on caregivers is reduced, thereby preventing lower back pain, etc. and as well as mitigating shortages in caregiving staff. One example of technology related to this kind of assisting apparatus is disclosed in PTL 1.

[0003] The assisting apparatus of PTL 1 includes a pair of right and left arm portions inserted into the underarms of a care receiver and, by raising the arm portions, assists a standing operation of a care receiver. This assisting apparatus is characterized by having arm portions with end portions that freely bend inward so as to support the back of the care receiver. The assisting apparatus also includes a chest support (holding member) that abuts on the chest of the care receiver, a grip gripped by the care receiver, a handle used by the caregiver at the time of transfer, and the like. As a result, it is possible to give the care receiver the same sense of security as the state of being held by a person when given assistance in standing up.

Prior Art Document

Patent Literature

[0004] PTL 1: JP-A-2008-36392

BRIEF SUMMARY OF THE INVENTION

Technical Problem

[0005] According to the description of the embodiment of the assisting apparatus in

PTL 1, the handle gripped by the caregiver during moving is configured to protrude forward. For this reason, although forward movement is facilitated, it is difficult to control lateral movement, rotational movement, and the position of the apparatus. For example, there is difficulty in putting an assisting apparatus, on which a care receiver is placed, into a small toilet stall and rotating and setting the assisting apparatus in front of a western-style toilet.

[0006] The present invention has been made in view of the above problem of the background art, and it is an object of the present invention to provide an assisting apparatus, on which a care receiver is placed, for which movement operations and position control are easy.

Solution to Problem

[0007] According to the present invention, an assisting apparatus is provided comprising: a base capable of moving with a care receiver placed thereon; an elevator that is supported on the base in a vertically movable manner; a pivot member that is supported by the elevator in a pivotable manner; a holder that is supported by the pivot member and holds the upper body of the care receiver, and by pivoting forward from the sitting posture, puts the care receiver into a transferring posture; a first handle portion provided on the pivot member or the holder and arranged on the front of the holder in the transferring posture; and a second handle portion provided on the pivot member or the holder and arranged on the underside of the holder in the transferring posture.

Advantageous Effects of Invention

[0008] In the assisting apparatus of the present invention, the first handle portion and the second handle portion are arranged away from each other in the front-rear direction. The caregiver then operates the assisting apparatus on which the care receiver is placed by gripping it at two locations, one hand gripping the first handle portion of the assisting apparatus and the other hand gripping the second handle portion. Consequently, moving and controlling the position of the assisting apparatus are facilitated.

Brief Description of Drawings

[0009]

[FIG. 1] FIG. 1 is a perspective view of an assisting apparatus 1 according to the embodiment as viewed obliquely from the rear.

5 [FIG. 2] FIG. 2 is a side view showing the structure of the assisting apparatus and a care receiver in a sitting posture.

[FIG. 3] FIG. 3 is a side view showing the structure of the assisting apparatus and the care receiver in a standing posture.

10 [FIG. 4] FIG. 4 is a partial side view showing the shape and mounting structure of a first handle and a second handle.

[FIG. 5] FIG. 5 is a view seen from the direction of arrow A in FIG. 4 showing the shape and mounting structure of the first handle and the second handle.

[FIG. 6] FIG. 6 is a plan view illustrating a situation in which the assisting apparatus is moved into a toilet stall and the care receiver is transferred to a western-style toilet.

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DESCRIPTION OF EMBODIMENTS

[0010] (1. Configuration of an assisting apparatus 1 of an embodiment)

An assisting apparatus 1 according to an embodiment of the present invention will be described with reference to FIGS. 1 to 6. FIG. 1 is a perspective view of the assisting apparatus 1 according to the embodiment as viewed obliquely from the rear. Further, FIG. 2 is a side view showing the structure of the assisting apparatus 1 and a care receiver M in a sitting posture, and FIG. 3 is a side view showing the structure of the assisting apparatus 1 and the care receiver M in a standing posture. As shown in FIG. 1, the front-rear direction, lateral direction, and vertical direction are determined in reference to the care receiver in FIGS. 2 and 3. In FIG. 2 and 3, a fixed cover 23, an elevator cover 33, and a control section 6 are not shown.

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[0011] The assisting apparatus 1 assists the care receiver M in standing up from the sitting posture to the standing posture and assists the care receiver in sitting down from the standing posture to the sitting posture. Further, the assisting apparatus 1, on which the care receiver is in a standing posture, is movable by an operation by a caregiver. As a result, the assisting apparatus 1 is capable of assisting the transfer and moving of the care receiver M. In the present specification, "standing posture" refers

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to a posture in which the lower body of the care receiver M is upright and the posture of the upper body is irrelevant. The assisting apparatus 1 includes a base 2, an elevator section 3, a pivot section 4, a holder 5, the control section 6, and the like.

[0012] The base 2 includes a frame 21, a support column 22, the fixed cover 23, a footrest 24, a lower leg contact 25, and six wheels 26 to 28, and the like. The frame 21 is provided near a floor surface F in an approximately horizontal manner. The support column 22 is erected upward from the center in the lateral direction at the front of the frame 21. An elevator driver 32 described later is arranged in the inner space of the support column 22 that has a roughly rectangular cross section. The fixed cover 23 covers and protects the periphery of the lower portion of the support column 22 and an elevator 31 described later.

[0013] The footrest 24 is fixed toward the rear of the top surface of the frame 21 in a roughly horizontal manner. A foot-shaped contact mark 241 drawn on the top surface of the footrest 24 guides foot placement of the care receiver M. The base 2 has sufficient mechanical strength even when the care receiver M is on it. There is a recess 242 in the center of the rear part of the footrest 24. The lower leg contact 25 is provided above the contact mark 241 by a pair of support arms 251 to the left and right. The pair of support arms 251 on the left and right extend rearward from both sides of the support column 22 on the top surface of the frame 21, bend in the middle, and then extend upward. The lower leg contact 25 is arranged across the upright portions of the left and right support arms 251 and extends in the lateral direction. The lower leg contact 25 is a portion that comes into contact with the lower legs of the care receiver M and is made of a cushion material. The arranged height of the lower leg contact 25 is adjustable.

[0014] A pair of left and right front wheels 26 are provided toward the front of the underside of the frame 21. The front wheels 26 have a steering function for changing the movement direction and a locking function for restricting movement. A pair of left and right inner wheels 27 are provided near the middle in the front-rear direction on the underside of the footrest 24. Further, a pair of left and right rear wheels 28 are provided toward the rear on the underside of the footrest 24. The inner wheels 27 and the rear wheels 28 have a steering function for changing the movement direction. With the six wheels 26 to 28, the frame 21 and the footrest 24 are maintained slightly

separated from the floor surface F in a horizontal manner. Due to the steering function of the six wheels 26 to 28, the assisting apparatus 1 is not only capable of moving in a front-rear direction and changing directions but is capable of moving laterally (i.e., moving directly to the side) and spin turning (i.e., rotating on the spot).

5 [0015] The elevator section 3 includes the elevator 31, the elevator driver 32, the elevator cover 33, and the like. The elevator 31 is elongated in the vertical direction and is supported by the rear surface of the support column 22 in a vertically movable manner. The upper portion of the elevator 31 projects rearward and there is a pivot support 34 toward the rear end projection. A pivot driver 42, which will be described
10 later, is arranged inside the upper portion of the elevator 31. The elevator driver 32 arranged inside the support column 22 drives the vertical movement of the elevator 31. The elevator cover 33 covers and protects the periphery and upper part of the elevator 31 and the support column 22. The elevator cover 33 is coupled to the elevator 31, and moves together vertically with the elevator 31. The lower portion of the
15 vertically moving elevator cover 33 always overlaps the outer peripheral side of the fixed cover 23.

[0016] The pivot section 4 is composed of a pivot arm 41, the pivot driver 42, and the like, and a first handle portion 432 is attached thereto. The pivot arm 41 corresponds to a "pivot member supported by the elevator in a pivotable manner" in the present
20 invention. One end 411 of the pivot arm 41 is supported by the pivot support 34 of the elevator 31 in a pivotable manner. The pivot driver 42, which is arranged inside the upper portion of the elevator 31, pivotally drives the other end 412 in the front-rear direction with an end 411 of the pivot arm 41 as the pivoting center. The pivot range of the pivot arm 41 is regulated by a stopper (not shown). A tilt support shaft 44 (see
25 FIG. 5) is provided at the other end 412 of the pivot arm 41. The first handle 43, which includes the first handle portion 432, is integrally attached to the other end 412 of the pivot arm 41 (described in detail later).

[0017] The holding member 5 includes a support member 51, a trunk receiving section 52, a pair of left and right underarm receiving portions 53, and the like, and a second
30 handle portion 542 is attached thereto. The front underside of the support member 51 is supported by the tilt support shaft 44 of the pivot arm 41 in a freely tiltable manner (described in detail later). The trunk receiving section 52 is provided on the rear top

side of the support member 51. Using a cushion material, the trunk receiving section 52 is formed into a planar shape close to the trunk shape of the care receiver M and can be flexibly deformed. A support surface 521 is a surface of the trunk receiving section 52 that comes into contact with the care receiver M from the chest to the abdomen area. The support surface 521 supports the trunk of the care receiver M from below.

[0018] The pair of left and right underarm receiving portions 53 are provided on the left and right sides of the trunk receiving section 52. The underarm receiving portions 53 are formed in an arc shape facing upward and support both sides of the care receiver M from below. As a result, the trunk receiving section 52 and the underarm receiving portions 53 hold the upper body of the care receiver M in a stable manner. The exterior color of the holding member 5 is black. The second handle 54 including the second handle portion 542 is integrally attached to the front underside of the support member 51 (described in detail later).

[0019] The control section 6 is provided on the top right side of the frame 21. The control section 6 controls the elevator driver 32 and the pivot driver 42 based on instructions from the care receiver M or the caregiver. For the control section 6, a computer device operated with software can be used. The computer device may be provided with a remote control device (not shown) for receiving instructions from the care receiver M or the caregiver. A standing-assistance program for assisting in standing and a sitting-assistance program for assisting in sitting are stored as executable software. A battery power supply (reference numeral omitted) which can be repeatedly charged and discharged is attached to the lower side of the control section 6. The battery power supply is also attached to the top left side of the frame 21. The battery power supply is also shared with the elevator driver 32 and the pivot driver 42.

[0020] (2. Shapes and mounting structures of the first handle 43 and the second handle 54)

Next, the first handle 43 and the second handle 54 will be described in detail. FIG. 4 is a partial side view showing the shapes and mounting structures of the first handle 43 and the second handle 54. FIG. 5 is a view of the shapes and mounting structures of the first handle 43 and the second handle 54 as viewed from the direction of the arrow

A in FIG. 4.

[0021] The first handle 43 is formed in a roughly square frame shape. The first handle 43 is composed of a pair of left and right first handle base shafts 431, the pair of left and right first handle portions 432, and a moving handle portion 433 (see FIG. 1).

5 As shown in FIG. 5, the right and left first handle base shafts 431 are respectively fixed to both sides of the bifurcated other end 412 of the pivot arm 41 and extend in the left and right directions. The right and left first handle portions 432 are each connected to an end of a first handle base shaft, are bent 90°, and extend upward. The right and left first handle portions 432 are parallel to each other and are curved toward the rear upper direction. The moving handle portion 433 extends in the left-right direction and connect the distal ends of the right and left first handle portions 432 to each other.

10 [0022] A tilt support shaft 44 is provided within the bifurcation at the other end 412 of the pivot arm 41. The tilt support shaft 44 is located between the left and right first handle base shafts 431. The supported member 51 of the holding member 5 has a tilting member 511 that fits around the tilt support shaft 44. Consequently, the holding member 5 freely tilts with the tilt support shaft 44 as a tilt axis; that is, the holding member 5 freely tilts with the first handle base shaft 431 as a tilt axis line. The tilting range of the holding member 5 is regulated by a stopper (not shown).

15 [0023] The second handle 54 is composed of a second handle base shaft 541, a pair of right and left second handle portions 542, and a pair of right and left second handle tips 543. As shown in FIGS. 4 and 5, the second handle base shaft 541 is fixed to a pair of handle mounting posts 512 extending from the support member 51. The second handle base shafts 541 passes over the back surface opposing to a support surface 521 of the holding member 5 with extending in the left and right directions. The left and right second handle portions 542 are respectively connected to the left and right ends of the second handle base shaft 541, are bent 90°, and extend in the front upper direction in parallel with each other.

20 [0024] The left and right second handle tips 543 are respectively connected to the ends of the second handle portion 432, bent 90°, and extend partway toward the other end 412 of the pivot arm 41. A predetermined separation distance D1 is maintained between the second handle 54 and the trunk receiving section 52. The separation

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distance D1 is appropriately set so that the body of the care receiver M can not get stuck in between the second handle 54 and the trunk receiving section 52. The second handle 54 has a white exterior color different from that of the holding member 5 and is quite conspicuous. The exterior colors of the second handle 54 and the holding member 5 are not limited to a combination of white and black and can be appropriately selected so that the second handle 54 stands out.

[0025] The care receiver M grips the first handle portions 432 of the first handle 43 during the standing operation and the sitting operation. The caregiver can move the assisting apparatus 1 forward by gripping and pulling the moving handle portion 433 of the first handle 43. Further, the caregiver enables the assisting apparatus 1 to move laterally or perform spin-turn by gripping the first handle portion 432 of the first handle 43 with one hand and gripping the second handle portion 542 of the second handle 54 with the other hand. In such a situation, the second handle portion 542, which is white, is conspicuous as seen by the caregiver from the underarm side of the care receiver M. Consequently, the assistant can easily grip the second handle portion 542.

[0026] (3. Use and operation of the assisting apparatus 1 of the embodiment)

Next, the use and operation of the assisting apparatus 1 of the embodiment will be described. In the following, a case in which the care receiver M sitting on a chair C performs a standing operation will be described as an example. If the assisting apparatus 1 is far away, the caregiver moves the assisting apparatus 1 close to the care receiver M in advance. The care receiver M in the sitting posture first pulls the assisting apparatus 1 toward himself/herself. Then, as shown in FIG. 2, the care receiver M places both legs under the holder 5. Here, when the holding member 5 becomes obstructive, the care receiver M lifts the lower end portion of the holding member 5 with his/her hand, or the care receiver lifts the lower end of the holding member 5 or the second handle base shaft 541 of the second handle 54 with his/her knees. Next, the care receiver M places both feet on the contact mark 241. The lower legs of the care receiver M comes into contact with or comes near the lower leg contact 25.

[0027] Next, the care receiver M starts an initial operation routine of the standing-assistance program of the control section 6. As a result, the height of the

elevator 31 is automatically adjusted according to the physique of the care receiver M. Next, the care receiver M leans the upper body against the trunk receiving section 52 and puts both arms forward from above the underarm receiving portions 53. Further, the care receiver M grips the left and right first handle portions 432 of the first handle 43 with both hands. As a result, the sitting state of the care receiver M shown in FIG. 2 is assumed. In the sitting state, the upper body of the care receiver M is in a posture inclined slightly forward. The orientation of the holding member 5 at this time is the orientation during the sitting posture.

[0028] Subsequently, the care receiver M starts a standing-assistance routine of the standing-assistance program. As a result, the vertical movement of the elevator 31 and the forward pivot of the pivot arm 41 are performed in a coordinated manner. When the standing-assistance program ends, the elevator 31 moves upward, the pivot arm 41 pivots forward, and the care receiver M shown in FIG. 3 assumes the standing state. In the standing state, the upper body of the care receiver M is in a posture that is inclined forward by a large amount. The orientation of the holding member 5 at the time is corresponding to the orientation at the time of transfer. The first handle portion 432 is arranged at the front of the holding member 5 at the time of transfer. The second handle portion 542 is arranged under the holding member 5 at the time of transfer and is arranged to the rear of the underarm position of the care receiver M supported by the underarm receiving portions 53.

[0029] Since the sitting operation of the care receiver M is roughly the opposite of the standing operation, explanations will be omitted. It should be noted that a part of the standing operation of the care receiver M described above may be assisted by a caregiver or someone acting on behalf of a caregiver.

[0030] The caregiver can move the care receiver M in the standing posture shown in FIG. 3 together with the assisting apparatus 1 and transfer the care receiver M to a place other than the chair C. As can be understood by comparing FIG. 2 and FIG. 3, the support surface 521 of the trunk receiving section 52 in the orientation during transfer is more horizontal than the support surface 521 in the sitting posture. Consequently, the care receiver M can leave his/her weight on the holding member 5 and be moved in a comfortable posture.

[0031] Here, attention is paid to a center of gravity position G of the total weight

obtained by combining the weight of the care receiver M held by the holding member 5 and the weight of the assisting apparatus 1 alone. As shown in FIG. 3, the center of gravity position G is located directly below the second handle portion 542 in the front-rear direction. That is, in the front-rear direction, the position of the second handle portion 542 coincides with the center of gravity position G. Due to this, when the caregiver grips the second handle portion 542, a moving force is easily applied and the moving force is easily transmitted to the assisting apparatus 1. Consequently, lateral movement and spin-turn of the assisting apparatus comes to be facilitated. In addition, the position of the assisting apparatus 1 is easily controlled.

[0032] Having the position of the second handle portion 542 coincide with the center of gravity position G in the front-rear direction is preferable but the position of the second handle portion 542 is not limited thereto. That is, as long as at least a portion of the second handle portion 542 is arranged under the holding member 5 within the front-rear span in the transferring posture, the second handle portion 542 is arranged in the vicinity of the center of gravity position G in the front-rear direction so that movement operability by the caregiver becomes favorable. Further, as long as at least a portion of the second handle portion 542 is arranged under the holding member 5 in the transferring posture between the front end of the holding member 5 and the rear end of the feet of the assistant M in the front-rear direction, the second handle portion 542 is arranged in the vicinity of the center of gravity position G in the front-rear direction so that movement operability by the caregiver becomes favorable.

[0033] Next, a case in which the assisting apparatus 1 is moved to a small toilet stall 91 and the care receiver M is transferred to a western-style toilet 93 will be described. FIG. 6 is a plan view that illustrates a situation in which the assisting apparatus 1 is moved to the toilet stall 91 and the care receiver M is transferred to the western style toilet 93. In FIG. 6, the holding member 5 and the care receiver M are not shown. As shown in FIG. 6, an entrance 92 of the toilet stall 91 is provided at the side wall. Consequently, the caregiver is required to retract the assisting apparatus 1 at the position indicated by the broken line while changing direction, perform lateral movement and spin-turn as necessary so as to move the assisting apparatus 1 to a position indicated by the solid line in front of the western-style toilet 93.

[0034] Here, the recess 242 at the center of the rear portion of the footrest 24 conforms

to the outer shape of a lower portion 94 of the western-style toilet 93. Consequently, moving space is increased by an amount corresponding to the depth of the recess 242 to which the lower portion 94 of the western-style toilet 93 is engageably inserted and movement of the assisting apparatus 1 is facilitated. Further, the recess 242 facilitates centering of the assisting apparatus 1 with respect to the western-style toilet 93. For example, it is possible to retract the assisting apparatus 1 firstly from an oblique direction, bring the recess 242 into contact with the lower portion 94 of the western-style toilet 93, and then rotate the assisting apparatus 1 with the recess 242 as the center.

[0035] Further, the recess 242 is also gentle in the sitting operation of the care receiver M. That is, since the care receiver M can sufficiently approach the western-style toilet 93 by an amount corresponding to the depth of the recess 242, there is no danger of the care receiver M falling down from the western-style toilet 93 and readjustments to the sitting position are reduced due to the shallow depth of the sitting operation.

In addition, the standing operation of the care receiver M is also facilitated.

[0036] (4. Condition and Effect of the assisting apparatus 1 of the Embodiment)

The assisting apparatus 1 according to the embodiment includes the base 2 that can be moved with a care receiver M placed thereon; the elevator 31 that is supported on the base 2 in a vertically movable manner; the pivot arm 41 that is supported by the elevator 31 in a pivotable manner; the holding member 5 that is supported by the pivot arm 41 and holds the upper body of the care receiver M, and by pivoting forward from the sitting posture, puts the care receiver M into a transferring posture; the first handle portion 432 provided on the pivot arm 41 or the holding member 5 and arranged on the front of the holding member 5 in the transferring posture; and the second handle portion 542 provided on the pivot arm 41 or the holding member 5 and arranged on the underside of the holding member 542 in the transferring posture.

[0037] In the assisting apparatus 1 according to the embodiment, the first handle portion 432 and the second handle portion 542 are arranged apart from each other in the front-rear direction. Then, the caregiver operates the assisting apparatus on which the care receiver M is placed by gripping it at two locations, one hand gripping the first handle portion 432 of the assisting apparatus 1 and the other hand gripping the second handle portion 542. Consequently, the moving operation and position control of the

assisting apparatus 1 are facilitated.

[0038] Further, the first handle portion 432 can be gripped by the care receiver M and a caregiver, and the second handle portion 542 can be gripped by a caregiver. Since the first handle 43 is shared by the care receiver M and the caregiver, the number of constituent parts of the assisting apparatus 1 is reduced.

[0039] Furthermore, at least a portion of the second handle portion 542 is arranged within a range of the front-rear direction under the holding member 5 in the transferring posture. In addition, when seen from another viewpoint, the second handle portion 542 is located under the holding member 5 in the transferring posture, and at least a portion of the second handle portion 542 is arranged between the front end of the holding member 5 and the rear end of the feet of the care receiver M in the front-rear direction. As a result, the second handle portion 542 is positioned in the vicinity of the center of gravity position G in the front-rear direction, and the transferring operation by the caregiver is facilitated.

[0040] Further, the holding member 5 has the underarm receiving portions 53 for supporting the underarms of the care receiver M, and the second handle portion 542 is arranged rearward of the underarm position of the care receiver M supported by the underarm receiving portions 53. As a result, the caregiver does not interfere with the arm of the care receiver M when using the second handle portion 542 and transferring operability is good.

[0041] Further, the position of the second handle portion 542 in the front-rear direction of the care receiver M held by the holding member 5 coincides with the center of gravity position G of the combined weight of weight of the care receiver M held by the holding member 5 and own weight of the assisting apparatus 1 itself. Consequently, when the caregiver grips the second handle portion 542, it is easy to apply a moving operation force, and the moving operation force is easily transmitted to the assisting apparatus 1; which facilitates lateral movement and spin-turn of the assisting apparatus 1, resulting in significant good transferring operability.

[0042] In addition, the base has three or more steerable wheels and is capable of spin-turn. As a result, it is easy to move and change direction in a small space such as the toilet stall 91.

[0043] Furthermore, the second handle portion 542 has an exterior color that is

different from that of the holder 5. Since the difference in exterior color makes the second handle portion 542 conspicuous as viewed from below the underarm of the care receiver M, the caregiver can easily grip the second handle portion 542.

[0044] Further, the holding member 5 has the support surface 521 for supporting the trunk of the care receiver M from below, and the support surface 521 in the transferring posture is more horizontal than the support surface 521 in the sitting posture. As a result, the care receiver M can leave his/her weight on the holding member 5 and be moved in a comfortable posture.

[0045] Further, the base 2 has a recess 241 is located on the rear side of the care receiver M held by the holding member 5 so that the lower portion 94 of the western-style toilet 93 can be engageably inserted into the recess. As a result, even in the small toilet stall 91, moving space is increased by an amount corresponding to the depth of the recess 242 and movement of the assisting apparatus 1 is facilitated. Further, the recess 242 facilitates centering of the assisting apparatus 1 with respect to the western-style toilet 93. In addition, since the care receiver M can sufficiently approach the western-style toilet 93 by an amount corresponding to the depth of the recess 242, there is no danger of the care receiver M falling down from the western-style toilet 93 and readjustments to the sitting position are reduced due to the shallow depth of the sitting operation.

[0046] (5. Modification and Application of the Embodiment)

Although the first handle portion 432 is provided on the pivot arm 41 and the second handle portion 542 is provided on the holding member 5 in this embodiment, the present invention is not limited to this configuration. That is, both the first handle portion 432 and the second handle portion 542 may be provided on the pivot arm 41 or the holder 5. Further, the first handle portion 432 and the second handle portion 542 may be formed in one piece. Furthermore, the effect of the present invention can be still obtained even if the assisting apparatus can not perform spin-turn, for example, in case of the steering functions merely being provided for the front two wheels of the four wheels. The present invention can be modified and applied in various other ways.

[0047] 1: assisting apparatus, 2: base, 242: recess, 26: front wheels, 27: inner wheels, 28: rear wheels, 3: elevator section, 31: elevator, 32: elevator driver, 4: pivot section,

41: pivot arm, 42: pivot driver, 43: first handle, 431: first handle base shaft, 432: first handle portion, 5: holder, 53: underarm receiving portions, 54: second handle, 541: second handle base shaft, 542: second handle portion, 93: western-style toilet, 94: lower portion, G: center of gravity.

CLAIMS

1. An assisting apparatus comprising:

5 a base capable of moving with a care receiver placed thereon;
an elevator that is supported by the base in a vertically movable manner;
a pivot member that is supported by the elevator in a pivotable manner;
a holder that is supported by the pivot member and holds an upper body of the
care receiver, and by pivoting forward from a sitting posture, puts the care receiver into a
10 transferring posture;

a first handle portion, being provided on the pivot member or the holder, which
is arranged on a front of the holder in the transferring posture; and

a second handle portion, being provided on the pivot member or the holder,
which is arranged on an underside of the holder in the transferring posture,

15 wherein the first handle portion can be gripped by the care receiver and a
caregiver, and the second handle portion can be gripped by a caregiver.

2. An assisting apparatus comprising:

a base capable of moving with a care receiver placed thereon;

20 an elevator that is supported by the base in a vertically movable manner;

a pivot member that is supported by the elevator in a pivotable manner;

a holder that is supported by the pivot member and holds an upper body of the
care receiver, and by pivoting forward from a sitting posture, puts the care receiver into a
transferring posture;

25 a first handle portion, being provided on the pivot member or the holder, which
is arranged on a front of the holder in the transferring posture; and

a second handle portion, being provided on the pivot member or the holder,
which is arranged on an underside of the holder in the transferring posture,

30 wherein at least a portion of the second handle portion is arranged within a range
of a front-rear direction under the holder in the transferring posture.

3. An assisting apparatus comprising:

a base capable of moving with a care receiver placed thereon;

an elevator that is supported by the base in a vertically movable manner;

a pivot member that is supported by the elevator in a pivotable manner;

a holder that is supported by the pivot member and holds an upper body of the
 5 care receiver, and by pivoting forward from a sitting posture, puts the care receiver into a
 transferring posture;

a first handle portion, being provided on the pivot member or the holder, which
 is arranged on a front of the holder in the transferring posture; and

a second handle portion, being provided on the pivot member or the holder,
 10 which is arranged on an underside of the holder in the transferring posture,

wherein the second handle portion is located under the holder in the transferring
 posture, and at least a portion of the second handle portion is arranged between a front
 end of the holder and a rear end of feet of the care receiver in the front-rear direction.

15 4. An assisting apparatus comprising:

a base capable of moving with a care receiver placed thereon;

an elevator that is supported by the base in a vertically movable manner;

a pivot member that is supported by the elevator in a pivotable manner;

a holder that is supported by the pivot member and holds an upper body of the
 20 care receiver, and by pivoting forward from a sitting posture, puts the care receiver into a
 transferring posture;

a first handle portion, being provided on the pivot member or the holder, which
 is arranged on a front of the holder in the transferring posture; and

a second handle portion, being provided on the pivot member or the holder,
 25 which is arranged on an underside of the holder in the transferring posture,

wherein the holder has an underarm receiving portion for supporting underarms
 of the care receiver, and the second handle portion is arranged rearward of a position of
 the underarm of the care receiver supported by the underarm receiving portion.

30 5. An assisting apparatus comprising:

a base capable of moving with a care receiver placed thereon;

an elevator that is supported by the base in a vertically movable manner;

a pivot member that is supported by the elevator in a pivotable manner;

a holder that is supported by the pivot member and holds an upper body of the care receiver, and by pivoting forward from a sitting posture, puts the care receiver into a transferring posture;

5 a first handle portion, being provided on the pivot member or the holder, which is arranged on a front of the holder in the transferring posture; and

 a second handle portion, being provided on the pivot member or the holder, which is arranged on an underside of the holder in the transferring posture,

 wherein a position of the second handle portion in a front-rear direction of the
10 care receiver held by the holder coincides with a position of center of gravity of combined weight of weight of the care receiver held by the holder and own weight of the assisting apparatus.

6. The assisting apparatus according to any one of claims 1, 3, 4 and 5, wherein at
15 least a portion of the second handle portion is arranged within a range of a front-rear direction under the holder in the transferring posture.

7. The assisting apparatus according to any one of claims 1, 2, 4, 5 and 6, wherein
the second handle portion is located under the holder in the transferring posture, and at
20 least a portion of the second handle portion is arranged between a front end of the holder and a rear end of feet of the care receiver in the front-rear direction.

8. The assisting apparatus according to any one of claims 1, 2, 3, 5, 6 and 7, wherein
the holder has an underarm receiving portion for supporting underarms of the care
25 receiver, and the second handle portion is arranged rearward of a position of the underarm of the care receiver supported by the underarm receiving portion.

9. The assisting apparatus according to any one of claims 1, 2, 3, 4, 6, 7 and 8,
wherein a position of the second handle portion in a front-rear direction of the care
30 receiver held by the holder coincides with a position of center of gravity of combined weight of weight of the care receiver held by the holder and own weight of the assisting apparatus.

10. The assisting apparatus according to any one of claims 1 to 9,
wherein the base has three or more steerable wheels and is capable of spin-turn.
- 5 11. The assisting apparatus according to any one of claims 1 to 10,
wherein the second handle portion has exterior color that is different from that
of the holder.
12. The assisting apparatus according to any one of claims 1 to 11,
10 wherein the holder has a support surface for supporting a trunk of the care
receiver from below, and the support surface in the transferring posture is more horizontal
than the support surface in the sitting posture.
13. The assisting apparatus according to any one of claims 1 to 12,
15 wherein the base has a recess, being provided on a rear side of the care receiver
held by the holder, so that a lower portion of the western-style toilet is engageably inserted.